AMENDMENTS TO THE CLAIMS:

Please amend the claims as follows:

Claims 1-20 (Canceled)

21. (New) A method for optimizing driver-vehicle performance in a driver operated vehicle, said method comprising:

collecting, on a substantially real-time basis, a plurality of measurements of at least one driver characteristic and at least one vehicle characteristic; and

B2 evaluating said plurality of measurements to predict a current driving environment within which the vehicle is presently being driven.

22. (New) The method of claim 21, wherein the measurement of the at least one driver characteristic is made by direct body scan of the driver.

23. (New) The method of claim 21, wherein the measurement of the at least one vehicle performance characteristic is at least one of (i) non-GPS based and (ii) geographically unspecific.

24. (New) The method of claim 21, wherein a resulting data set from the collection of the plurality of measurements of at least one driver characteristic and at least one vehicle characteristic has a capacity to be statistically segregated into a plurality of driving environment categories.

25. (New) The method of claim 21, wherein the measurement of at least one vehicle characteristic comprises quantification of at least one of acceleration pedal position, gear selection, turn indicator activity, vehicle speed, steering angle, engine speed and brake activity.

26. (New) The method of claim 21, further comprising:

utilizing as reference data, annotated data values incorporating a driver indication of driving environment existing at the time a respective annotated data value was collected thereby enabling look-up analysis of each real-time collected measurement.

27. (New) The method of claim 21, wherein the at least one driver characteristic is driver eye movement.

28. (New) The method of claim 21, wherein the at least one driver characteristic is driver head movement.

29. (New) The method of claim 21, further comprising:

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utilizing predetermined criteria for predicting driving environments, the predetermined criteria differentiating between at least two of a plurality of driving environments including highway driving, main road driving, suburban driving and city driving.

30. (New) The method of claim 21, further comprising:

collecting and recording a plurality of measurements of a plurality of driver characteristics and a plurality of vehicle characteristics from a plurality of subjects thereby creating a collection of reference values for the driver and vehicle characteristics.

31. (New) The method of claim 21, further comprising:

collecting and recording a plurality of measurements of a plurality of driver characteristics and a plurality of vehicle characteristics from a plurality of subjects driving a plurality of routes thereby creating a collection of reference values for the driver and vehicle characteristics.

32. (New) The method of claim 21, further comprising:

considering at least acceleration pedal position, gear selection, turn indicator activity, vehicle speed, steering angle, engine speed and brake activity in the evaluation.

33. (New) The method of claim 21, further comprising:

considering at least one of acceleration pedal position, gear selection, turn indicator activity, vehicle speed, steering angle, engine speed and brake activity in the evaluation.

34. (New) The method of claim 21, further comprising:

analyzing in a pre-processing step over a predetermined time window, a series of iteratively collected measurements of at least one of the plurality of measurements of at least one driver characteristic and at least one vehicle characteristic for purposes of feature extraction.

35. (New) The method of claim 34, wherein said analysis in the preprocessing step comprises computing an average of the collected measurements of at least one of the plurality of measurements of at least one driver characteristic and at least one vehicle characteristic.

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36. (New) The method of claim 35, further comprising:

determining the probable driving environment occurring during the predetermined time window based on the computed average of the collected measurements of at least one of the plurality of measurements of at least one driver characteristic and at least one vehicle characteristic.

37. (New) The method of claim 36, wherein said predetermined time window is sufficiently long to determine the driving environment occurring during the predetermined time window while avoiding identification of a small-time scale driving pattern.

38. (New) The method of claim 36, wherein said predetermined time window is sufficiently short to determine a small-time scale driving pattern occurring during the predetermined time window.

39. (New) The method of claim 38, wherein said determined small-time scale driving pattern identifies at least one of the conditions of turning the vehicle, changing lanes in the vehicle and passing another vehicle.

40. (New) The method of claim 34, wherein said analysis in the preprocessing step comprises computing a standard deviation of the collected measurements of at least one of the plurality of measurements of at least one driver characteristic and at least one vehicle characteristic.

41. (New) The method of claim 36, further comprising:

determining the probabilistic driving environment occurring during the predetermined time window based on the averaged value.

42. (New) The method of claim 21, further comprising:

ascertaining a probability of a particular driving environment occurring during a predetermined time window utilizing a neural network to analyze the plurality of collected measurements.

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43. (New) The method of claim 42, further comprising:

performing statistical pattern recognition utilizing the neural network.

44. (New) The method of claim 42, wherein the ascertainable driving environments include at least one of a highway driving environment, a main road driving environment, a suburban driving environment, and a city driving environment.

45. (New) The method of claim 21, further comprising:

effecting changes in performance characteristics of the vehicle based on the evaluation of the plurality of measurements of at least one driver characteristic and at least one vehicle characteristic.

46. (New) The method of claim 45, wherein effecting the changes in vehicle performance characteristics further comprises adapting the performance of at least one of (i) an engine and (ii) a chassis of the vehicle based on recognition of a particular driving environment.

47. (New) The method of claim 46, wherein effecting the changes in performance characteristics of the vehicle aspects further comprises effecting real-time optimization of at least one of an engine parameter and a chassis parameter to a predicted current driving environment.

48. (New) A method for ascertaining, on an essentially real-time basis, large time-scale driving patterns indicative of the current driving environment of an operator-driven vehicle, said method comprising:

repetitively sensing, on an essentially real-time basis, at least one of (i) a non-GPS-based, geographically unspecific vehicle characteristic and (ii) a physical characteristic of an operator of an operator-driven vehicle, and therefrom collecting a data set for statistical pattern recognition analysis;

performing statistical pattern recognition analysis on the data set; and

ascertaining a large time-scale driving pattern occurring during the collection of the data set based on the analysis.

49. (New) The method as recited in claim 48, further comprising:

computing statistical characteristics of the data set including at least one of the parameters average magnitude, variability and change rate of the data set.

50. (New) The method as recited in claim 48, further comprising:

categorizing the ascertained large time-scale driving pattern occurring during the collection of the data set into one category, among a plurality of categories, that is representative of the driving environment occurring during the collection of the data set.

51. (New) The method as recited in claim 50, further comprising:

defining the plurality of categories to differentiate between (i) a highway driving environment, (ii) a suburban driving environment and (iii) a city driving environment.

52. (New) The method as recited in claim 50, further comprising:

classifying a highway driving environment as one of the plurality of possible categories of driving environment occurring during the collection of the data set.

53. (New) The method as recited in claim 50, further comprising:

classifying a main road driving environment as one of the plurality of possible categories of driving environment occurring during the collection of the data set.

54. (New) The method as recited in claim 50, further comprising:

classifying a suburban driving environment as one of the plurality of possible categories of driving environment occurring during the collection of the data set.

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55. (New) The method as recited in claim 50, further comprising:

classifying a city driving environment as one of the plurality of possible categories of driving environment occurring during the collection of the data set.

56. (New) The method as recited in claim 50, further comprising:

basing the categorization on a probability calculated from the data set.

57. (New) The method as recited in claim 48, further comprising:

producing a data stream constituted at least in part by iterative measurements of the at least one of (i) a non-GPS-based, (ii) geographically unspecific vehicle characteristic and (iii) a physical characteristic of an operator of an operator-driven vehicle; and

selecting members of the data set based on application of a large-scale predetermined time window to the data stream.

58. (New) The method as recited in claim 57, wherein the large-scale predetermined time window has a period of approximately 400 seconds.

59. (New) The method as recited in claim 48, further comprising:

producing a data stream constituted at least in part by iterative measurements of the at least one of (i) a non-GPS-based, (ii) geographically unspecific vehicle characteristic and (iii) a physical characteristic of an operator of an operator-driven vehicle; and

ascertaining a small time-scale driving pattern occurring during the collection of the data set by analysis of a sub-set sampling therefrom based on application of a small-scale predetermined time window to the data stream.

60. (New) The method as recited in claim 49, wherein the small-scale predetermined time window has a period of approximately 40 seconds.

61. (New) The method as recited in claim 48, wherein each member of the data set represents a discrete quantification of at least one vehicle characteristic selected from a group of vehicle characteristics including (i) accelerator pedal position, (ii) gear selection, (iii) turn indicator position, (iv) vehicle speed, (v) steering angle, (vi) engine speed and (vii) brake activity.

62. (New) The method as recited in claim 61, wherein the physical characteristic of the operator is eye orientation.

63. (New) The method of claim 62, wherein the measurement of the operator's eye orientation is made by direct body scan of the driver.

64. (New) The method as recited in claim 48, wherein the physical characteristic of the operator is head orientation.

65. (New) The method of claim 64, wherein the measurement of the operator's head orientation is made by direct body scan of the driver.

66. (New) The method as recited in claim 50, further comprising:

effecting changes in vehicle performance aspects based on the ascertained large time-scale driving pattern for potentiating vehicle performance in the categorized driving environment.

67. (New) A method for ascertaining, on an essentially real-time basis, large time-scale driving patterns indicative of the current driving environment of an operator-driven vehicle, said method comprising:

repetitively sensing, on an essentially real-time basis, a vehicle characteristic and collecting therefrom a data set for statistical pattern recognition analysis;

performing statistical pattern recognition analysis on the data set; and

ascertaining a large time-scale driving pattern occurring during the collection of the data set based on the analysis.

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68. (New) The method as recited in claim 67, wherein said vehicle characteristic is at least one of (i) non-GPS-based and (ii) geographically unspecific.

69. (New) A method for ascertaining, on an essentially real-time basis, large time-scale driving patterns indicative of the current driving environment of an operator-driven vehicle, said method comprising:

repetitively sensing, on an essentially real-time basis, a physical characteristic of an operator of an operator-driven vehicle, and therefrom collecting a data set for statistical pattern recognition analysis;

performing statistical pattern recognition analysis on the data set; and

ascertaining a large time-scale driving pattern occurring during the collection of the data set based on the analysis.

70. (New) The method as recited in claim 69, wherein said physical characteristic of the operator is head movement.

71. (New) The method as recited in claim 69, wherein said physical characteristic of the operator is eye movement.

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72. (New) The method as recited in claim 69, further comprising:

determining a current driving environment from said ascertained large time-scale driving pattern.